AMENDED SET OF CLAIMS

[received by the International Bureau 29 July 2004 (29.07.04); originally claimed claims 1 and 2 of the set of claims replaced by amended claims 1 and 2; claims 3, 4, 5, 6 of the set of claims retained without amendment; originally claimed claim 9 of the set of claims renumbered to claim 7; originally claimed claim 10 of the set of claims renumbered to claim 8; originally claimed claim 11 of the set of claims renumbered to claim 9; claims 10, 11, 12, 13 and 14 are new]

1. A method for removing hydrocarbons from a vapor-gas medium formed during petroleum product storage and when filling a tank therewith, comprising pump supplying a liquid medium to a liquid-gas jet device, pumping out vapor-gas medium with this device from a tank filled with petroleum products or from a petroleum product storage container, compressing the vapor-gas medium in the liquid-gas jet device by energy of the liquid medium, feeding a mixture formed in the liquid-gas jet device of the vapor-gas and liquid mediums to a separator, separating the mixture in the separator into a gaseous phase and a liquid medium with removal of the gaseous phase and the liquid medium from the separator, wherein the gaseous phase is fed from the separator to an absorption column into which a hydrocarbon liquid is fed as an absorbent, the process of absorption of hydrocarbons from the gaseous phase is carried out by the hydrocarbon liquid in the absorption column, then the hydrocarbon-removed gaseous phase and the hydrocarbon liquid containing hydrocarbons of the gaseous phase dissolved therein are separately evacuated from the absorption column, **characterized in that** gasoline is used as the petroleum product and hydrocarbon liquid, and prior to being fed to the absorption column the gasoline is cooled to a temperature within the range of from minus 10°C to minus 50°C, and the pressure of the mixture of the vapor-gas and liquid mediums, which is formed in the liquid-gas jet device, is maintained in the separator at a level ranging from 0.2 to 1.5 MPa.

2. The method according to claim 1, **characterized in that** gasoline is fed to the separator or to the pump input and simultaneously the liquid medium is removed from the separator into the container for storing petroleum products or into the filling tank.

3. The method according to claim 1, **characterized in that** the gaseous phase after exit from the absorption column is additionally cooled, wherein a condensate formed as a result of cooling the gaseous phase is separated therefrom in an additional separator, and the gaseous phase is fed from the additional separator to a vortical pipe in which the gaseous phase is separated into cold and warm gas mediums, then the warm gas medium is removed into the atmosphere and the cold gas medium is used to cool the gaseous phase after the exit of the latter from the absorption column.

4. The method according to claim 1, **characterized in that** the gaseous phase from the

absorption column is fed to a gasdynamic separator in which the gaseous phase as a result of its acceleration and expansion is cooled with the formation in the stream of a condensate from the hydrocarbon vapors remaining in the gaseous phase, then the condensate is separated from the gaseous phase and removed from the gasdynamic separator.

5. The method according to claim 1, **characterized in that** the hydrocarbon liquid with the hydrocarbons of the gaseous phase dissolved therein is fed from the absorption column to a separator or to a pump input.

6. The method according to claim 1, **characterized in that** the hydrocarbon liquid with the hydrocarbons of the gaseous phase dissolved therein is fed from the absorption column into a container for storing petroleum products or into a tank to be filled therewith.

7. The method according to claim 1, **characterized in that** the gaseous phase after exit from the absorption column is fed to a membrane device in which the gaseous hydrocarbons remaining therein are separated therefrom, then gas leaned of hydrocarbons and hydrocarbon-enriched gas are separately removed from the membrane device.

8. The method according to claim 7, **characterized in that** the hydrocarbon-enriched gas is pumped from the membrane device by the liquid-gas jet device.

9. The method according to claim 7, **characterized in that** the hydrocarbon-enriched gas is pumped from the membrane device by an additional liquid-gas jet device.

10. A method for removing hydrocarbons from a vapor-gas medium formed during petroleum product storage or when filling a tank therewith, comprising pump supplying a liquid medium to a liquid-gas jet device, pumping out vapor-gas medium with this device from a tank being filled with a petroleum product or from a petroleum product storage container, compressing the vapor-gas medium in the liquid-gas jet device by energy of the liquid medium, feeding a mixture formed in the liquid-gas jet device of the vapor-gas and liquid mediums to a separator, separating the mixture in the separator into a gaseous phase and a liquid medium with removal of the gaseous phase and the liquid medium from the separator, wherein the gaseous phase is fed from the separator to an absorption column into which a hydrocarbon liquid is fed as an absorbent, the process of absorption of hydrocarbons from the gaseous phase is carried out by the hydrocarbon liquid in the absorption column, then the hydrocarbon-removed gaseous phase and the hydrocarbon liquid containing hydrocarbons of the gaseous phase dissolved therein are separately evacuated from the absorption column, **characterized in that** kerosene is used as the petroleum product and hydrocarbon liquid, and prior to being fed to the absorption column the kerosene is cooled to a temperature within the range of from minus 10°C to minus 50°C, and the pressure of the mixture of the vapor-gas and liquid mediums, which is formed in the liquid-gas jet device, is maintained in the separator at a level ranging from 0.2 MPa to 1.5

MPa.

11. The method according to claim 10, **characterized in that** kerosene is fed to the separator or to the pump input and simultaneously the liquid medium is removed from the separator into a container for storing petroleum products or into a tank to be filled therewith.

12. The method according to claim 10, **characterized in that** the hydrocarbon liquid with the hydrocarbons of the gaseous phase dissolved therein is fed from the absorption column to a separator or to a pump input.

13. The method according to claim 10, **characterized in that** the hydrocarbon liquid with the hydrocarbons of the gaseous phase dissolved therein is fed from the absorption column into a container for storing petroleum products or into a tank to be filled therewith.

14. An installation for removing hydrocarbons from a vapor-gas medium formed during petroleum product storage or when filling a tank therewith, comprising an absorption column, a pump, a liquid-gas jet device and a separator with a liquid medium output and a gaseous phase output, wherein the liquid-gas jet device is connected by a liquid medium input to a pump output, is connected by a vapor-gas medium input to a source of that medium – a tank or petroleum product container, and the liquid-gas jet device is connected by an output to the separator, the gaseous phase output from the separator is connected to an absorption column, the absorption column is connected to a pipeline for removal of the hydrocarbon-removed gaseous phase and to a pipeline for feeding the hydrocarbon liquid with a refrigerator mounted thereon, **characterized in that** the refrigerator, pump input or separator is connected to the gasoline supply pipeline, and the liquid medium output from the separator is connected to the container for storage of gasoline or to the tank to be filled with gasoline.